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The relationship between government trust and preventive behaviors during the COVID-19 pandemic in China: Exploring the roles of knowledge and negative emotion

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ABSTRACT

Government trust is known to be associated with preventive practices during pandemics, but few studies have explored the roles of knowledge and negative emotion in conditioning the relationship between trust and preventive behaviors. The aim of this study was to explore the roles of knowledge and negative emotion in conditioning the relationship between trust and preventive measures during the COVID-19 pandemic in China. Data from a cross-sectional survey of 3000 Chinese adults [mean (SD) age 36.93 (12.11) years; 52.4% male], conducted using quota-sampling method (March 2–2020 to March 23–2020), were analyzed. Overall, respondents performed recommended preventive measures more frequently (3.21 out of 4) than excessive preventive measures (2.11 out of 4). Government trust was positively associated with both officially recommended ($b = 0.12$; 95%CI = 0.18, 0.25) and excessive preventive behaviors ($b = 0.07$; 95%CI = 0.03, 0.10). The positive relationship between trust and excessive preventive behaviors was found to be statistically significant only among those with low levels of COVID-19 knowledge. Officially recommended preventive behavior is most likely to happen when there is a combination of high levels of government trust and low levels of negative emotion. Therefore, government trust increases both official and excessive (sometimes unscientific) preventive behaviors. Interventions shall aim to enhance people's COVID-19 knowledge and to reduce negative emotions.

1. Introduction

In December 2019, a local outbreak of acute respiratory syndrome with unknown etiology, later identified as the COVID-19, was detected in Wuhan City, Hubei Province, China. Because of its being highly contagious, the virus quickly spread to almost all provinces of mainland China in a month, with more than 14,000 confirmed cases and 304 deaths as of 1 February 2020. The Chinese government took various measures to contain the virus, including case isolation, contact tracing, environmental disinfection, etc. (Wei and Ren, 2020). Among all measures to combat the virus, personal prevention is of particular importance. According to the prevention guidelines published by the Chinese Center for Disease Control and Prevention (China CDC), the recommended behaviors included wearing face masks, washing hands frequently with water and soap, covering coughs and sneezes with

tissues, avoiding touching eyes/nose/mouth with unwashed hands, avoiding contacting with affected person, and maintaining social distance (China CDC, 2020).

Though these official recommendations were found to be effective in reducing the risk of infection (Prem et al., 2020), individual compliance with such measures is likely to be influenced by a range of economic, socio-political, and psychological factors (Bish and Michie, 2010). Among them, government trust is of particularly importance to effective public health intervention in a pandemic situation (Vinck et al., 2019). Government authorities are responsible for providing information and guidelines about the virus, and for developing treatments and vaccines. The attitude towards political institutions can affect how people process health messages. Lack of trust could lead to refusal to comply, resulting in an increased difficulty in controlling the disease. During the SARS period, the Singapore Government's success was partly due to their

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ability to build the public's confidence in community and their transparent communication approaches. Perceived openness of government communication was associated with the compliance with the recommendations and the reduce spread of SARS (Quah and Lee, 2004). During the 2009 H1N1 pandemic, trust in medical organization predicted perceived efficacy of officially recommended protection measures (Gilles et al., 2011). At the early stage of the COVID-19 pandemic, trust was found to be positively associated with preventive behaviors (Wong et al., 2020).

As COVID-19 quickly spread throughout the world, misinformation and conspiracy theories related to the origin, prevention, diagnosis, and treatment of the disease emerged on social networking sites. The uncertainty concerning the virus provided a fertile ground for excessive personal prevention strategies to thrive. Excessive prevention refers to unnecessary measures which are more likely to be psychological comforts rather than drugs to act as preventive ones (Ye et al., 2020). During a pandemic, excessive prevention has no significant effects or even counter-effects on reducing the chance of being infected. Previous studies found that excessive preventive behaviors are related to people's knowledge, perceived risk, health status, as well as their demographic characteristics (Yang et al., 2020; Ye et al., 2020). However, the relationship between government trust and the acceptance of excessive prevention remains largely unknown.

Furthermore, the intensive media coverage about the coronavirus increased people's knowledge about the virus but also triggered negative emotions among the public. A large number of studies conducted at the early stage of the coronavirus showed that knowledge increased the adoption of government-recommended preventive practices while negative emotion decreased the willingness (Pakpour and Griffiths, 2020; Zhong et al., 2020). But what are the roles of knowledge and negative emotion in conditioning the relationship between trust and prevention? In this study, we aim to use data from a cross-sectional survey conducted after the rising phase of the virus outbreak in China to explore the answers to the following questions: 1) what is the relationship between government trust and recommended preventive behaviors, 2) more importantly, what is the relationship between government trust and excessive preventive behaviors, and 3) what are the roles of COVID-19 knowledge and negative emotion in conditioning the relationship between trust and prevention (recommended and excessive preventive behaviors)?

2. Methods

2.1. Participants

We used data from an online national representative survey fielded between March 2 and March 23, 2020, two months after the lockdown of Wuhan. Participants were recruited through Diaoyanba, a commercial survey research company in China, with a pre-recruited panel of approximately 1.8 million potential participants. To achieve a representative pool of respondents, stratified quota-sampling method was employed. That is, the sample is drawn to reflect the properties of the population across a range of subcategories in terms of age, gender and education. A total of 3000 respondents aged 18 years or above in China participated in the survey. The response rate is 24.56%.

Table 1 shows the demographic characteristics of the sample. About 83.4% of the respondents ($n = 2502$) were aged below 50 years and 52.4% of the sample were male. 79.9% of the respondents ($n = 2397$) had high school education or less and nearly three quarters of the respondents ($n = 2260$) were married. Besides, 60.8% of the respondents ($n = 1824$) lived in the urban areas and 85.9% of them ($n = 2577$) had monthly family income below 30,000 yuan (USD 4240).

Table 1
Demographic characteristics of respondents ($N = 3000$).

| Variable | Frequency | Percentage (%) |
|-------------------------|-----------|----------------|
| Age group | | |
| 18–29 years | 975 | 32.5 |
| 30–39 years | 882 | 29.4 |
| 40–49 years | 645 | 21.5 |
| 50–59 years | 249 | 8.3 |
| Above 60 years | 249 | 8.3 |
| Gender | | |
| Male | 1572 | 52.4 |
| Female | 1428 | 47.6 |
| Education | | |
| Primary school or below | 540 | 18.0 |
| Secondary school | 1142 | 38.1 |
| High school | 713 | 23.8 |
| College | 315 | 10.5 |
| University or above | 290 | 9.7 |
| Marital status | | |
| Single | 740 | 24.7 |
| Married | 2260 | 75.3 |
| Region | | |
| Rural | 1176 | 39.2 |
| Urban | 1824 | 60.8 |
| Income | | |
| <6000 | 224 | 7.5 |
| 6001–10,000 | 864 | 28.8 |
| 10,001–30,000 | 1488 | 49.6 |
| 30,001–60,000 | 302 | 10.1 |
| >60,001 | 122 | 4.0 |

2.2. Measures

2.2.1. Officially recommended preventive actions

Wearing mask and washing hands are highly recommended for prevention according to the WHO's suggestion. Thus officially recommended preventive actions were measured by asking respondents to indicate the frequencies of wearing masks and washing hands with water and soap since the Wuhan lockdown on January 23, 2020 on a 4-point scale (1 = 'never', 4 = 'always'). Two items were averaged to form a score where higher score indicates higher frequency.

2.2.2. Excessive preventive actions

Excessive preventive actions were conceptualized as unnecessary and ineffective actions for preventing COVID-19. Using the same 4-point scale, respondents were asked to report how frequently they had taken vitamin supplements and herbal medicine. The scale was created by averaging the score of the two items.

2.2.3. Government trust

Chinese government at all levels are responsible for implementing control measures to prevent disease transmission. Thus government trust was measured using two items: trust in central government and local government. Each item was measured on a 5-point Likert scale where 1 stands for 'completely distrust' and 5 for 'completely trust'. These two items were averaged to create an index. Larger number indicates higher trust.

2.2.4. Knowledge about COVID-19

The questionnaire contained four COVID-19 knowledge questions (see Table 2). A correct answer was coded as 1 and therefore, the maximum knowledge score is 4.

2.2.5. Negative emotion

Adapted from Yeung and Fung's (2007) measure of emotion responses towards SARS, negative emotion was measured by asking respondents to indicate their levels of 'sadness', 'fear', 'anger' and 'shock' when facing COVID-19 on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). The average of the four items formed a measure of

Table 2
Preventive behaviors, government trust, knowledge, and negative emotion during COVID-19 pandemic.

| Variables | M (SD) |
|--|----------------|
| Recommended preventive behaviors (scale 1–4, never-always) | |
| A1. Wearing a mask | 3.28 (0.89) |
| A2. Washing hands with water and soap | 3.13 (0.91) |
| Summary score-Cronbach alpha 0.73 | 3.21 (0.80) |
| Excessive preventive behaviors (scale 1–4, never-always) | |
| I1. Taking vitamin C | 2.29 (0.91) |
| I2. Taking medicine without symptoms | 1.92 (1.00) |
| Summary score-Cronbach alpha 0.68 | 2.11 (0.83) |
| Government trust (scale 1–5, completely distrust, completely trust) | |
| P1. The central government | 4.21 (0.90) |
| P2. The local government | 3.94 (0.96) |
| Summary score-Cronbach alpha 0.73 | 4.08 (0.82) |
| Knowledge of COVID-19 (scale 0–1, false-true) | |
| K1. Drinking alcohol won't reduce coronavirus risk (T) | 0.76 (0.43) |
| K2. Viruses are more virulent in cold and wet weather, thus turning on air-conditioners or heater up to 30 degree could fight the coronavirus. (F, reverse code) | 0.45 (0.50) |
| K3. The coronavirus lasts longest on smooth, non-porous surface, thus the virus survives longer on metal surface than sweater. (T) | 0.61 (0.49) |
| K4. Going out with ginger slices in the mouth can prevent the coronavirus. (F, reverse code) | 0.50 (0.50) |
| Summary score | 2.32 (0.80) |
| Negative emotion (scale 1–5, strongly disagree- strongly agree) | |
| E1. Sadness | 3.47 (1.30) |
| E2. Fear | 3.37 (1.31) |
| E3. Anger | 3.33 (1.31) |
| E4. Shock | 3.70 (1.19) |
| Summary score-Cronbach alpha 0.87 | 3.47 (1.08) |

negative emotion.

2.2.6. Demographics

Six demographic characteristics were included as controls: age, gender, education, marital status, living area and monthly family income.

2.3. Statistical analysis

A series of multiple regressions were conducted to explore the relationship between government trust and two types of preventive behaviors. The specific modeling process followed three steps. First, government trust was associated with preventive behaviors, controlling for demographics. Second, interaction effects between knowledge and government trust were explored. Third, interaction effects between negative emotion and government trust were explored. All statistical analyses were performed using SPSS.

3. Results

3.1. Descriptions of trust, knowledge and negative emotion

Generally speaking, respondents' trust in political institutions were

very high ($M = 4.08$, $SD = 0.82$, $\alpha = 0.73$). And the levels of trust in the central government ($M = 4.21$, $SD = 0.90$) was much higher than the local government ($M = 3.94$, $SD = 0.96$). As for knowledge, only 7.5% of the respondents ($n = 225$) correctly answered all the COVID-19 knowledge questions. For negative emotion, 62.7% of the respondents ($n = 1881$) agreed or strongly agreed that they have experienced shock in response to COVID-19, followed by sadness (56.2%, $n = 1686$), fear (52.3%, $n = 1569$) and anger (49.4%, $n = 1482$).

3.2. Predicting preventive behaviors

The frequency of taking recommended preventive measures was higher (3.21 out of 4) than taking excessive preventive measures (2.11 out of 4). Specifically, wearing facial masks had higher frequency ($M = 3.28$, $SD = 0.89$) than washing hands with soap and water ($M = 3.13$, $SD = 0.91$). For excessive prevention, taking Vitamin C ($M = 2.29$, $SD = 0.91$) was more frequently than taking medicine without symptoms ($M = 1.92$, $SD = 1.00$).

Table 3 showed the findings from a series of multiple regressions predicting preventive behaviors. After controlling for demographic variables, our results showed that government trust was a significant predictor for both recommended ($b = 0.21$; 95%CI = 0.18, 0.25) and excessive ($b = 0.07$; 95%CI = 0.03, 0.10) preventive behaviors. Respondents with higher levels of trust would have higher frequency of performing both recommended and excessive preventive behaviors.

To explore the potential moderating roles of knowledge and negative emotion, two interaction terms were entered the regression equation separately. The results were presented in Table 3 (see the model 2–3, 5–6). Knowledge turned out to be a significant moderator of the relationship between government trust and excessive preventive behaviors ($b = -0.09$; 95%CI = -0.14 , -0.05). According to Fig. 1B, high levels of government trust was positively related to excessive preventive behaviors only among those with low levels of COVID-19 knowledge. However, no significant interaction effect was found between trust and knowledge on recommended preventive behaviors. The positive effects of trust on scientific preventive behaviors were parallel across groups of different levels of knowledge (Fig. 1A).

Statistically significant interaction effects were detected between trust and negative emotion on recommended preventive behaviors. The interaction term had a negative coefficient ($b = -0.06$; 95%CI = -0.09 , -0.03), which means that recommended preventive measures were most likely to happen when there was a combination of high levels of government trust and low levels of negative emotion. The pattern is visualized in Fig. 2A. In contrast, the interaction term between trust and negative emotion on excessive behaviors was positively signed ($b = 0.06$; 95%CI = 0.03, 0.09). As plotted in Fig. 2B, among those with high negative emotion, high government trust was associated with higher probability of excessive preventive behaviors. But for people with low negative emotion, higher trust was associated with lower likelihood of excessive prevention.

Finally, results also show that respondents' preventive behaviors were also impacted by their demographic characteristics. Respondents who were well-educated ($b = 0.03$; 95% CI = 0.00, 0.06), married ($b = 0.29$; 95% CI = 0.22, 0.26) and rich ($b = 0.08$; 95%CI = 0.04, 0.11) tended to take recommended preventive behaviors more frequently. Respondents who were male ($b = -0.12$; 95%CI = -0.18 , -0.06), young ($b = -0.16$; 95%CI = -0.19 , -0.13), and single ($b = 0.13$; 95%CI = 0.05, 0.21) were less likely to perform excessive preventive behaviors.

To better reflect the entire Chinese population, we weighted our data by gender and age according to the data of Sixth National Population Census in China. The results revealed little difference (see Appendix 1). We further explored if respondents from rural or urban areas exhibited different patterns. The results showed very small differences between these two groups (see Appendix 2).

Table 3
Predicting behavioral responses during COVID-19 pandemic (N = 3000).

| Variables | Recommended preventive behaviors | | | Excessive preventive behaviors | | |
|------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|------------------------------------|------------------------------------|------------------------------------|
| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
| Age | b [95% CI] -0.02 [-0.04, 0.01] | b [95% CI] -0.02 [-0.05, 0.01] | b [95% CI] -0.03 [-0.05, 0.00] | b [95% CI] -0.16 [-0.19, -0.13] | b [95% CI] -0.16 [-0.18, -0.13] | b [95% CI] -0.14 [-0.16, -0.11] |
| Sex(1 = female) | -0.04 [-0.02, 0.09] | 0.04 [-0.02, 0.09] | 0.03 [-0.02, 0.09] | -0.12 [-0.18, -0.06] | -0.11 [-0.17, -0.06] | -0.10 [-0.15, -0.04] |
| Education | 0.03 [0.00, 0.06] | 0.02 [-0.01, 0.05] | 0.03 [0.00, 0.05] | -0.01 [-0.04, 0.02] | 0.00 [-0.03, 0.03] | -0.00 [-0.03, 0.02] |
| Marital status (1 = married) | 0.29 [0.22, 0.36] | 0.29 [0.22, 0.36] | 0.30 [0.23, 0.37] | 0.13 [0.05, 0.21] | 0.13 [0.05, 0.20] | 0.09 [-0.01, 0.16] |
| Areas (1 = urban) | -0.06 [-0.12, 0.00] | -0.06 [-0.12, -0.00] | -0.06 [-0.12, 0.00] | -0.02 [-0.09, 0.04] | -0.02 [-0.08, 0.04] | -0.03 [-0.10, 0.03] |
| Income | 0.08 [0.04, 0.11] | 0.07 [0.04, 0.10] | 0.08 [0.04, 0.11] | 0.02 [-0.01, 0.06] | 0.03 [-0.01, 0.06] | 0.02 [-0.01, 0.06] |
| Government trust | 0.21 [0.18, 0.25] | 0.19 [0.15, 0.22] | 0.22 [0.18, 0.25] | 0.07 [0.03, 0.10] | 0.09 [0.05, 0.12] | 0.02 [-0.02, 0.06] |
| Knowledge | | 0.21 [0.18, 0.25] | | | -0.25 [-0.29, -0.22] | |
| Know*trust | | 0.03 [-0.02, 0.07] | | | -0.09 [-0.14, -0.05] | |
| Negative emotion | | | -0.07 [-0.09, 0.04] | | | 0.22 [0.19, 0.24] |
| Emotion*trust | | | -0.06 [-0.09, -0.03] | | | 0.06 [0.03, 0.09] |
| Constant | 2.57 [2.37, 2.76] | 2.63 [2.44, 2.82] | 2.61 [2.41, 2.80] | 2.49 [2.28, 2.69] | 2.42 [2.22, 2.62] | 2.40 [2.21, 2.60] |
| R ² (%) | 8.10 | 12.30 | 9.70 | 5.70 | 11.30 | 14.60 |

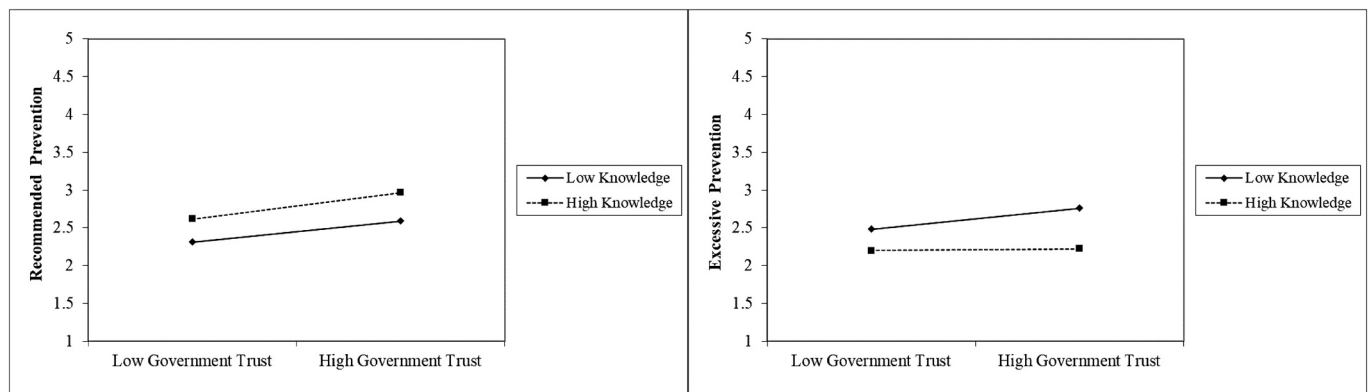


Fig. 1. Interaction effects between government trust and knowledge on preventive behaviors.

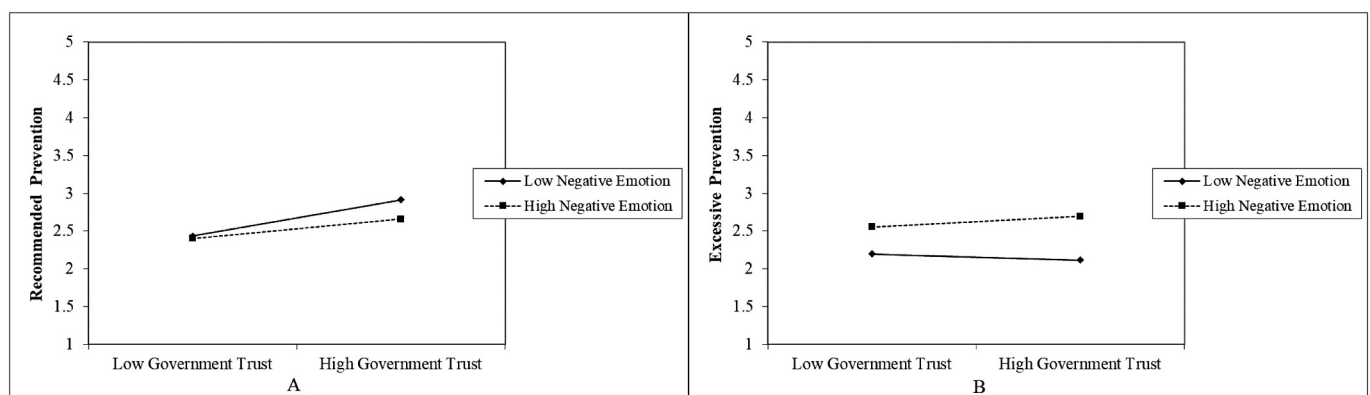


Fig. 2. Interaction effects between government trust and negative emotion on preventive behaviors.

4. Discussion and conclusion

We collected data after the rising phase of the virus outbreak, with an aim to understand the role of government trust on preventive behavior during the COVID-19 pandemic. On average, the general public in China have an extremely high level of trust in political institutions. Echoing previous studies, we found that government trust is a strong determinant

of preventive behaviors (Freimuth et al., 2014). Trust in authorities increase efficacy beliefs in officially recommended measures for preventing COVID-19, which in turn lead to these preventive measures. At the early stage of COVID-19, Wong et al. (2020) argued that institutional trust was of central importance to predicting adequate preventive behavior. Findings from our study show a consistent pattern, indicating that government trust plays a role in effective public health prevention.

Interestingly, our study found that government trust not only increased compliance with the recommended preventive measures, but also leading to measures which were not suggested or recommended. One explanation could be that people who trust political institutions and scientific organizations are more inclined to perceive COVID-19 as an actual risk since these organizations are usually the sources of messages informing the public about the COVID-19 pandemic (Plohl and Musil, 2020). Perceived risk and perceived severity of COVID-19 are positively associated with excessive self-protective behaviors through inducing irrational beliefs about their prevention (Yang et al., 2020). Therefore, increased government trust may lead to higher frequency of excessive prevention behaviors.

The moderating role of knowledge about COVID-19 between government trust and excessive preventive behaviors lends support to such explanation. The positive relationship between government trust and excessive prevention was only significant among people with low levels of COVID-19 knowledge. Excessive prevention was most likely to happen when high levels of government trust was combined with low levels of knowledge. Such findings suggest that knowledge help individuals, especially those with higher government trust, understand the effectiveness of officially recommended prevention strategies, and therefore they are less likely to take excessive preventive behaviors. In contrast, people who lack knowledge tend to have higher irrational beliefs about recommended prevention, thus they are easily persuaded by misinformation as well as conspiracy theories (Sallam et al., 2020). Previous studies have argued that knowledge was a critical explanatory factor of behavioral responses towards the epidemic disease (Varti et al., 2009). In our study, knowledge plays an important role in improving recommended preventive behaviors. More importantly, it also serves as a blocker to decrease the probability of excessive preventive behaviors, especially among people with high levels of government trust.

Our study also found that the relationship between government trust and preventive behaviors was moderated by negative emotion. Specifically, government trust was found to increase the frequency of recommended preventive behaviors and decrease the frequency of excessive preventive behaviors for those who have low levels of negative emotion. In contrast, if an individual was in panic mood, high government trust was associated with both recommended and excessive prevention. According to the appraisal theory, “emotions not only arise from, but also elicit specific cognitive appraisals” (Lerner et al., 2003, p.144). Negative emotion is associated with a tendency to perceive a situation as unclear and less controllable in situations, making people become motivated to

take precautionary behaviors. High arousal of negative emotion (the intensity that an individual experiences) could disrupt an individual’s cognitive and perceptual processes in coping crisis (Shields et al., 2016), which prompts them to engage in a series of prevention activities, regardless of scientific or not.

Taken together, our study enriches our understanding about the role of government trust, knowledge, and negative emotion in predicting both officially recommended and excessive preventive behaviors. Trust in political institutions positively predicts different types of precautionary behaviors, but these relationships are conditioned by knowledge and emotion. These findings have important practical implications for combating COVID-19. First, building trust during a public health crisis is an effective risk communication strategy for enhancing individual compliance with recommended prevention. Government trust is derived from political institutions’ preexisting reputation and performance (Mishler and Rose, 2001). It also can be influenced by the speed of the authority’s response to the crisis. Therefore, it is crucial for the authority to win public support and confidence during the crisis. Second, insufficient knowledge is a catalyst for excessive preventive measures, especially among people with high levels of government trust. It is therefore important to increase people’s knowledge about the pandemic through health information campaigns. Third, the fact that extreme negative emotion leads to a lower likelihood of recommended prevention but higher excessive prevention behavior suggests that it is necessary for the authority to alleviate unnecessary fears towards the pandemic through public communication.

There are some limitations to this study. First, the causal relationship between government trust and prevention is uncertain using cross-sectional data. Second, our survey was conducted in China, an authoritarian government with a unique political culture. Thus extreme caution is needed when generalizing the findings from our study to the other societies.

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Declaration of Competing Interest

Each author claims no competing interests.

Appendix A. Appendix 1

Predicting behavioral responses during COVID-19 pandemic (Weighted).

| | Recommended preventive behaviors | | | Excessive preventive behaviors | | |
|------------------------------|----------------------------------|----------------------|----------------------|--------------------------------|----------------------|----------------------|
| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
| Variables | b [95% CI] | b [95% CI] | b [95% CI] | b [95% CI] | b [95% CI] | b [95% CI] |
| Age | -0.03 [-0.06, -0.00] | -0.04 [-0.06, -0.01] | -0.04 [-0.07, -0.01] | -0.16 [-0.18, -0.13] | -0.15 [-0.18, -0.12] | -0.13 [-0.16, -0.10] |
| Sex(1 = female) | 0.05 [0.01, 0.12] | 0.07 [0.01, 0.12] | 0.06 [0.00, 0.12] | -0.14 [-0.20, -0.08] | -0.13 [-0.19, -0.07] | -0.12 [-0.18, -0.07] |
| Education | 0.04 [0.01, 0.07] | 0.03 [-0.00, 0.05] | 0.03 [0.01, 0.06] | -0.02 [-0.04, 0.01] | -0.01 [-0.04, 0.02] | -0.01 [-0.04, 0.02] |
| Marital status (1 = married) | 0.33 [0.24, 0.41] | 0.33 [0.25, 0.41] | 0.34 [0.25, 0.42] | 0.10 [0.02, 0.19] | 0.10 [0.02, 0.18] | 0.07 [-0.01, 0.15] |
| Areas (1 = urban) | -0.09 [-0.15, -0.03] | -0.09 [-0.14, -0.03] | -0.08 [-0.14, -0.02] | -0.05 [-0.11, 0.02] | -0.05 [-0.11, 0.01] | -0.06 [-0.12, -0.00] |
| Income | 0.12 [0.08, 0.15] | 0.11 [0.07, 0.14] | 0.12 [0.08, 0.15] | 0.03 [-0.01, 0.06] | 0.04 [0.01, 0.07] | 0.03 [-0.00, 0.06] |
| Government trust | 0.21 [0.18, 0.25] | 0.18 [0.15, 0.22] | 0.21 [0.18, 0.25] | 0.06 [0.03, 0.10] | 0.08 [0.05, 0.12] | 0.03 [-0.01, 0.06] |
| Knowledge | | 0.21 [0.17, 0.24] | | | -0.22 [-0.25, -0.18] | |

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| | Recommended preventive behaviors | | | Excessive preventive behaviors | | |
|--------------------|----------------------------------|--------------------|----------------------|--------------------------------|----------------------|-------------------|
| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
| Know*trust | | 0.00 [-0.04, 0.04] | | | -0.09 [-0.13, -0.05] | |
| Negative emotion | | | -0.07 [-0.10, -0.04] | | | 0.19 [0.17, 0.22] |
| Emotion*trust | | | -0.07 [-0.10, -0.03] | | | 0.07 [0.03, 0.10] |
| Constant | 2.34 [2.14, 2.54] | 2.43 [2.23, 2.62] | 2.38 [2.18, 2.58] | 2.52 [2.31, 2.72] | 2.43 [2.23, 2.63] | 2.44 [2.24, 2.64] |
| R ² (%) | 9.70 | 13.70 | 11.30 | 7.20 | 11.30 | 14.80 |

Appendix B. Appendix 2

Predicting behavioral responses during COVID-19 pandemic (Rural vs. Urban).

| Variables | Recommended prevention (urban) | | | Recommended prevention (rural) | | | Excessive prevention (urban) | | | Excessive prevention (rural) | | |
|------------------------------|--------------------------------|---------------------|----------------------|--------------------------------|---------------------|----------------------|------------------------------|----------------------|----------------------|------------------------------|----------------------|----------------------|
| | b [95% CI] | b [95% CI] | b [95% CI] | b [95% CI] | b [95% CI] | b [95% CI] | b [95% CI] | b [95% CI] | b [95% CI] | b [95% CI] | b [95% CI] | b [95% CI] |
| Age | -0.01 [-0.04,0.03] | -0.01 [-0.05, 0.02] | -0.01 [-0.05, 0.03] | -0.03 [-0.07, 0.02] | -0.03 [-0.07, 0.01] | -0.04 [-0.08, -0.00] | -0.20 [-0.24, -0.16] | -0.19 [-0.23, -0.15] | -0.17 [-0.21, -0.13] | -0.11 [-0.16, -0.07] | -0.11 [-0.15, -0.06] | -0.08 [-0.13, -0.04] |
| Sex (1 = female) | 0.05 [-0.02,0.13] | 0.06 [-0.01, 0.13] | 0.05 [-0.02, 0.12] | 0.03 [-0.06, 0.12] | 0.03 [-0.06, 0.11] | 0.03 [-0.06, 0.11] | -0.05 [-0.13, 0.03] | -0.03 [-0.11, 0.04] | -0.02 [-0.09, 0.05] | -0.24 [-0.33, -0.14] | -0.23 [-0.32, -0.15] | -0.23 [-0.31, -0.14] |
| Education | 0.04 [0.01, 0.07] | 0.02 [-0.01, 0.05] | 0.04 [0.01, 0.07] | 0.01 [-0.04, 0.07] | 0.01 [-0.04, 0.07] | 0.01 [-0.04, 0.06] | -0.00 [-0.03, 0.03] | 0.01 [-0.02, 0.04] | 0.00 [-0.03, 0.03] | -0.01 [-0.06, 0.04] | -0.01 [-0.06, 0.05] | -0.00 [-0.06, 0.05] |
| Marital status (1 = married) | 0.36 [0.26, 0.46] | 0.36 [0.26, 0.46] | 0.37 [0.27, 0.47] | 0.20 [0.09, 0.31] | 0.21 [0.10, 0.31] | 0.20 [0.10, 0.31] | 0.24 [0.13, 0.34] | 0.23 [0.13, 0.33] | 0.17 [0.07, 0.27] | 0.00 [-0.11, 0.12] | -0.00 [-0.11, 0.11] | -0.01 [-0.12, 0.10] |
| Income | 0.06 [0.01, 0.10] | 0.05 [0.01, 0.10] | 0.06 [0.01, 0.10] | 0.11 [0.06, 0.16] | 0.10 [0.05, 0.15] | 0.11 [0.06, 0.16] | -0.00 [-0.05, 0.04] | -0.00 [-0.05, 0.04] | -0.00 [-0.05, 0.04] | 0.06 [0.01, 0.12] | 0.07 [0.02, 0.13] | 0.06 [0.01, 0.12] |
| Government trust | 0.22 [0.18, 0.27] | 0.20 [0.15, 0.24] | 0.23 [0.18, 0.27] | 0.20 [0.15, 0.25] | 0.18 [0.13, 0.23] | 0.21 [0.16, 0.26] | 0.14 [0.10, 0.19] | 0.16 [0.12, 0.21] | 0.09 [0.05, 0.14] | -0.03 [-0.09, 0.02] | -0.01 [-0.06, 0.05] | -0.08 [-0.13, -0.02] |
| Knowledge | | 0.22 [0.17, 0.26] | | | 0.18 [0.13, 0.24] | | | -0.26 [-0.31, -0.22] | | | -0.24 [-0.30, -0.19] | |
| Know*trust | | -0.02 [-0.07, 0.03] | | | 0.12 [0.05, 0.19] | | | -0.11 [-0.16, -0.06] | | | -0.09 [-0.16, -0.02] | |
| Negative emotion | | | -0.04 [-0.07, -0.00] | | | -0.11 [-0.15, -0.07] | | | 0.21 [0.18, 0.25] | | | 0.22 [0.18, 0.27] |
| Emotion*trust | | | -0.05 [-0.10, -0.01] | | | -0.07 [-0.11, -0.02] | | | 0.07 [0.03, 0.12] | | | 0.04 [0.01, 0.09] |
| Constant | 2.49 [2.22, 2.76] | 2.54 [2.28, 2.81] | 2.51 [2.24, 2.78] | 2.56 [2.25, 2.86] | 2.60 [2.30, 2.90] | 2.63 [2.33, 2.93] | 2.47 [2.18, 2.75] | 2.41 [2.13, 2.68] | 2.40 [2.13, 2.67] | 2.48 [2.15, 2.81] | 2.41 [2.09, 2.73] | 2.38 [2.07, 2.69] |
| R ² (%) | 8.60 | 13.50 | 9.30 | 8.10 | 12.00 | 12.10 | 8.20 | 13.90 | 16.30 | 5.80 | 11.30 | 16.10 |

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